

Artful Instruction: Refining TVET Pedagogy on Food Safety Requirements

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Abstract

Food safety is a critical issue in the culinary industry, and culinary students as a Technical and Vocational Education and Training (TVET) practitioners must understand the importance of adhering to food safety requirements. However, there are several challenges in ensuring students' perceptions of conformity to food safety requirements are accurate and effective. These issues include the complexity of food safety regulations, the varying levels of understanding among students, and the limited resources available to culinary programs to provide comprehensive training. This study explores vocational culinary students' perceptions of conformity to food safety requirements. The research employs quantitative design research, using surveys to collect data from 120 students enrolled in culinary programs at vocational schools in Johor, Malaysia. The study aims to understand how students view their adherence to food safety protocols and how their training and education shape their perceptions. This study is structured as a survey employing a distribution of questionnaires to find culinary students in Johor, Malaysia views compliance with food safety requirements in terms of food safety training, food safety rules, food safety standards, and license compliance with food safety standards. Statistical Package for Social Science (SPSS) version 26.0 was used to compute the survey responses' mean value, standard deviation, and frequency. All of the responses to the research questions got a high mean score. The results reveal that most students understand food safety practices well, but there needs to be more knowledge and implementation of some critical protocols. Furthermore, the study revealed that vocational students' general perceptions of food safety laws regarding food safety rules had the highest mean value, indicating that this is the most influential factor in persuading how culinary students in Johor, Malaysia perceive compliance with food safety standards. These findings have implications for culinary education programs and the food service industry, suggesting that more attention should be paid to providing students with comprehensive training in food safety practices to ensure safe and healthy food preparation.

1. Introduction

Following the definition of food safety and hygiene, food quality is maintained by several conditions and practices that prevent contamination and foodborne illness (Luu, Davies & Dunne, 2017). This claim is supported by Foo & Yusoff (2020), who underlines the importance of focusing on food safety to prevent microbial contamination. In order to ensure food safety, the processes of food preparation, handling, and storage are referred to as food safety. Jeinie et al. (2018) assert that food handlers are essential to maintaining strict compliance with food safety laws across the whole food chain, particularly during food preparation and storage stages. Good hygienic standards in the food service business are the foundation for preventing foodborne illnesses; they can also lessen dangers to consumers and public health (Wambui, Karuri, Lamuka & Matofari, 2017). Reboucas et al. (2017) emphasized that food safety is essential since the greater the number of daily meals served, the greater the likelihood of food contamination.

Khan, Chamhuri & Farah (2015) believe that food service providers must conform to food safety laws, from managing raw materials to preparing utensils. In addition, they argue that human training in food safety is essential since consumers are continuously seeking healthy, high-quality food. Most food poisoning occurrences occur in restaurants and schools, as Rajamanickam, Ganeson & Ravindran (2012) reported. Fazil et al. (2013) discovered that outbreaks of foodborne illness induced by infractions of food safety regulations had been observed globally. Several studies that evaluated the quality of microorganisms at various street food stalls in African nations, including Nigeria, indicated that street food is inappropriate for consumption since the isolation of common germs might cause foodborne illnesses (Akabanda et al., 2017). According to Pilcherer et al. (2014), 31% of foodborne outbreaks in the European Union are linked to restaurants, cafes, and hotels.

With an annual average of 8,000 cases of food poisoning recorded, the Malaysian Ministry of Health has received several cases of food poisoning in the preceding five years (New Straits Times, 2018). Canteen food could get contaminated with harmful microorganisms if food handlers do not adhere to food safety requirements, such as keeping the environment, equipment, and food clean when preparing food. As cases increase yearly, Malaysia's food poisoning problem becomes increasingly alarming. Throughout the first three months of 2016, there were 2,325 cases of food poisoning involving children and school personnel, according to the available evidence (Shafiee et al., 2018). The state with the highest number of food poisoning cases was Selangor, followed by Kedah, Perak, and Kelantan. In the meantime, Perak recorded over one thousand cases of food poisoning at educational institutions (Chin, Wong & Lee, 2019). According to statistics from New Straits Times (2018), 3,821 instances of food poisoning in schools were documented in 2010, 3,940 cases in 2016, and 6,012 cases in 2017.

As such, there were some issues related to culinary students' perceptions of food safety regulations, such as lack of understanding where some culinary students may not fully understand the reasons behind food safety regulations, which can lead to frustration and resistance towards following them (Hong, Lin & Liu, 2019). Then, the overemphasis on creativity which culinary education often emphasizes creativity and innovation in cooking may conflict with the rigid guidelines and regulations associated with food safety. There were also time constraints problems as some culinary students may feel that following food safety regulations slow down their cooking process and increases the time required for food preparation (Kim & Yoon, 2019).

Grunert, Hieke & Wills (2014) argues that students should have a fundamental understanding of food safety to ensure that the food they produce is free of bacteria and chemicals. This information is essential for ensuring that rice-based foods are free of pathogens. Culinary students need to understand the importance of food safety regulations and be educated on the reasons behind them. It is also important for educators to balance creativity with safety and to provide students with the necessary resources and training to comply with food safety regulations. To ensure that the food consumed by the general public is disease-free, food service organizations must carry enormous responsibility (Kim et al., 2018).

To ensure safe food handling methods in the food service business, the perceptions of culinary students on compliance with food safety regulations are vital. To safeguard the public from foodborne illnesses caused by hazardous microbes, chemical dangers, or physical contaminants, food safety is crucial. In order to improve food safety standards and decrease the occurrence of foodborne diseases, it is essential to comprehend culinary students' attitudes regarding food safety (Hogan et al, 2019). It is crucial to evaluate the food safety expertise of culinary students in vocational programs. According to a survey, many culinary students lack knowledge of fundamental food safety procedures, such as handwashing and temperature regulation (Kim & Lee, 2020). This ignorance can result in noncompliance with food safety regulations and an increased risk of foodborne illness. In addition, it might result in a negative perspective of food safety regulations, since students may not see the value in implementing food safety practices if they do not comprehend its significance.

Then, culinary students may view food safety regulations as an impediment to their creativity in the kitchen. The culinary arts are frequently connected with inventiveness, experimentation, and originality. Nonetheless, chefs and cooks may think that rigorous compliance with food safety laws inhibits their innovation. Consequently, it is essential to educate culinary students on the significance of food safety while also fostering their creativity in the kitchen. The foodservice industry's culture and conventions may also impact culinary students' perceptions

of food safety (De Boer et al, 2019). Certain kitchens may take shortcuts to save time or money, which can jeopardies food safety standards. Thus, culinary trainees may consider noncompliance with food safety standards as usual or even necessary to thrive in the field. It is essential to instill a culture of food safety in the kitchen and emphasize the significance of complying with food safety regulations. In addition, some students may place a greater emphasis on flavour and presentation than food safety, which can result in violations of food safety rules. In order to preserve the health of consumers, it is essential to address these attitudes and values throughout culinary education and to emphasize the significance of food safety.

Based on the opinions of culinary students in Johor, Malaysia, this study aimed to determine the extent to which food safety requirements have been adhered. With the aid of this research, culinary students will be more compliant with food safety regulations, resulting in the creation of committed culinary students. Before commencing their practical training in the kitchen, culinary students must be informed about food safety procedures. The ability of culinary students to understand and apply information about food safety can assist their analysis of food safety rules. The objective of the most culinary course is to increase students' knowledge of food safety regulations. Thus, this research should help students interested in food safety standards acquire further knowledge and abilities. In order to lower the risk of foodborne illness, it is essential to comprehend how these individuals behave, go about their everyday lives, and prioritize food safety.

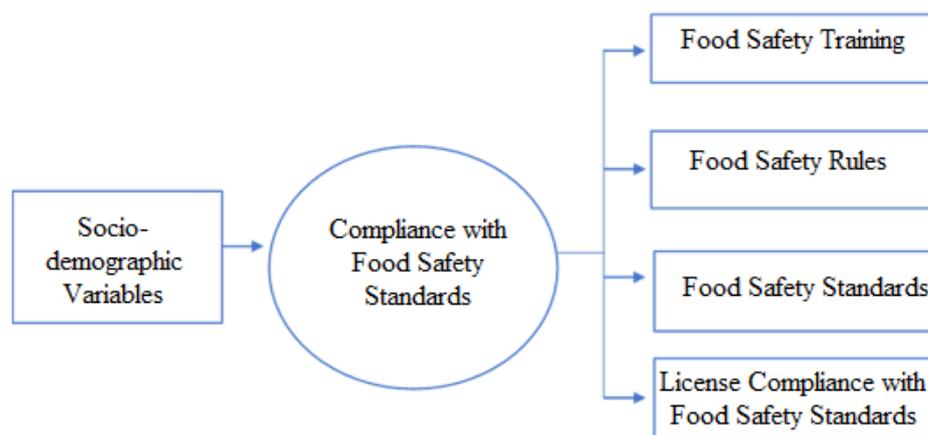


Fig. 1 Research theoretical structure (Adapted from Ligia (2018)'s work)

The conceptual framework for the study that the researcher utilized to conduct this investigation is shown in Figure 1. The researcher uses one socio-demographic item as the primary variable—compliance with food safety rules as the main factor. The researcher's four dependent variables were the mandate for food safety training, food safety rules, food safety standards, and license compliance with food safety standards. The researcher created these four items to ascertain the culinary students' perceptions of food safety.

The components of the food safety standards are included in the study's conceptual framework, as described by Ligia (2018). This conceptual framework was applied in a Brazilian study of food truck sellers. This study and the notion of the "Compliance with Food Safety Standards" theoretical framework are related. Culinary students' ability to learn about and apply the topic of food safety can aid in their analysis of food safety laws. Therefore, this study assessed how culinary students in the state of Johor, Malaysia perceives food safety standards in terms of food safety training, food safety rules, food safety standards, and license compliance with food safety standards.

2. Methodology

A methodology is a system of rules and procedures governing an act or scientific topic. It also refers to determining the most efficient means of conducting research and addressing problems (Capunzo, 2018). Before beginning to collect study data, it is vital to develop a methodological framework. The study was designed as a survey employing the distribution of questionnaires, and a quantitative methodology was utilized. Survey research is utilized because it is one of the most efficient ways to collect empirical data, obtain a large number of respondents, generalize the results to the community under consideration, and obtain rich data quickly for a low cost. This strategy is used to survey a sample of the population. In order to produce valid data, the sample should reflect the characteristics of the examined population (Pirsahab, 2018). In order to conduct a non-experimental quantitative survey study, the researcher surveyed vocational catering students in the state of Johor.

This study uses the questionnaire as its instrument of inquiry. The opinions of students were collected through the distribution of questionnaires. The questionnaire is intended to collect information and data from culinary students in vocational schools around Johor, Malaysia. The advantage of using this questionnaire is that

it encourages responders to provide an honest opinion. There are two methods for distributing questionnaires: first, the researcher distributes the questionnaires to students in person and online, as the research instrument separation shown in Table 1.

Table 1 *Research instrument*

Section	Construct	No. of Questions	Item
Section A	Demographics	2	A1 – A2
Section B	Food Safety Training	7	B1 – B7
Section C	Food Safety Rules	7	C1 – C7
Section D	Food Safety Standards	7	D1 – D7
Section E	License Compliance with Food Safety Standards	7	E1 – E7

Five sections were designated A, B, C, D, and E on the questionnaire. Part A comprises the demographic profile or background information of the responder. Section B identifies the perceptions of culinary students in the state of Johor, Malaysia, regarding compliance with food safety rules concerning food safety training, section C about food safety rules, section D regard to food safety rules, and section E about license compliance with food safety standards. Section A's demographic component consists of two questions to assess the respondent's background: gender and year of education. In parts B, C, D, and E, the researcher uses an ordinal Likert scale to indicate the subject's level of agreement with a given statement. After responders have completed the prepared scale, data can be gathered.

To test the validity of the questionnaire, the researcher engaged the aid of three experts to review the created instrument: two academics in the field of catering at public institutions as topic experts and a head Malay language teacher as a language expert. With this instrument's validity, the researcher's items are more persuasive because they are based on the lecturer's suggestions. The lecturer assessed the questionnaire items to ensure that the aims and questions of the study corresponded with the research being conducted.

The researcher selected 30 students who had taken a Home Science course for a pilot study. These students were chosen as a sample for the pilot study because their characteristics closely resemble the target groups. According to Connelly (2008) and Treece (2005), 10% of the random sample must be gathered as pilot study samples. Cronbach's Alpha is a suitable model for testing the instrument's reliability and attaining an acceptable result. A score of 0.804 suggests that this research instrument is appropriate for answering the research question. The collected information will be presented as tables, numbers, percentages, frequencies, mean and standard deviation interpretations. To analyze the data, the researcher will apply descriptive statistics.

3. Result and Discussion

The study's findings have been gathered and analyzed based on the researcher's planned research questions. The researcher then evaluated the data following the demands of the research question. The respondents' demographic data are shown in Table 2.

Table 2 *Details on the demographics of the respondent*

Details	Dimension	Total	Percent (%)
Gender of Respondent	Male	44	36.7
	Female	76	63.3
Years of study	Year 1	93	80
	Year 2	27	20

This study includes all students enrolled in culinary courses at two vocational colleges in Johor. According to the acquired results of the analysis, the total number of respondents was 120 students, including 44 male students and 76 female students. Moreover, 93 respondents (77.5%) are in their first year of study, while 27 respondents (18.7%) are in their second year. Next, table 3 presents the mean score distribution and interpretation of student evaluations of compliance with food safety standards in terms of food safety training.

Table 3 *Distribution of the mean score and standard deviation of vocational students' general perceptions of food safety laws in terms of food safety training*

No	Factor	Mean	Standard Deviation
1	Food safety training is mandatory for all individuals involved in handling food.	4.37	0.50
2	In order to produce food of superior quality, food operators must undergo training in food safety.	4.39	0.50
3	Food safety training instructs individuals, especially those working in the commercial sector, on the correct and secure methods of handling food.	4.37	0.55
4	Participating in food safety training can reduce the likelihood of experiencing foodborne illness.	4.42	0.51
5	Food workers can get an understanding of the importance of appropriate food handling by participating in safety training.	4.40	0.50
6	Food service staff can acquire knowledge about hygienic practices and food safety by participating in food safety training.	4.36	0.50
7	Food safety training can lead to food handlers who experience an excellent work environment.	4.40	0.50
Overall Mean Score		4.39	0.51

Overall, with a mean score of 4.39, student interpretation of food safety laws in terms of food safety training is high. The item with the highest mean score, 4.42, was that "participating in food safety training can reduce the likelihood of experiencing foodborne illness". Item 5, with a mean score of 4.40, is tied for second place with item 7. In addition, item 2 obtained the third highest average score, 4.39, showing that "in order to produce food of superior quality, food operators must undergo training in food safety". According to the findings of this survey, all seven items in the portion measuring culinary students' impressions of conformity with food safety regulations in terms of food safety training had a high mean score. This section's item with the lowest mean score is item 6, with a score of 4.36, indicating that "food service staff can acquire knowledge about hygienic practices and food safety by participating in food safety training".

Students' impressions of food safety legislation will likely be favorable regarding food safety training. Food safety rules protect customers from the risks involved with ingesting contaminated or hazardous food, and students are likely to recognize the significance of these laws (Pilling et al., 2019). Angelillo (2011) states that food operators must be aware of the rules and regulations governing the use of equipment in the kitchen and must be vigilant in monitoring and maintaining the equipment so that it is not easily damaged and is organized. This situation can help the institution's administration save money on culinary equipment purchases. In addition, students can learn how to manage food appropriately to reduce the risk of food contamination.

Most students feel that food safety training is essential for all food handlers because it develops awareness of the importance of handling food properly to protect food safety and avoid causing harm to consumers due to unsanitary food handling (Ladeira et al., 2017). Training in food safety is also essential for students, particularly those pursuing employment in the food business. They must be aware of the risks connected with food handling and preparation and how to prevent contamination and ensure food safety.

Students may also have issues or critiques regarding food safety rules and training. For instance, people may believe that the laws are excessively complex or restrictive or need to be successfully implemented. In addition, they may believe that the training is too time-consuming or costly or does not effectively prepare them for the obstacles they would face in the sector. In addition, students believe that food safety training can enhance food suppliers' hygiene and food safety expertise. Training in food safety is necessary to develop awareness and serve as a guide for ingredients that can harm food (Jayaratne & Harrison, 2018). Students must comprehend and value the significance of food safety training and participate actively in efforts to enhance food safety procedures and

standards. Doing so may aid in consumer protection and ensure that the food they produce and serve is safe and nutritious.

Then, table 4 presents the mean score distribution and interpretation of student evaluations of compliance with food safety standards in terms of food safety rules.

Table 4 *Distribution of the mean score and standard deviation of vocational students' general perceptions of food safety laws in terms of food safety rules*

No	Factor	Mean	Standard Deviation
1	Prior to being authorized to handle food, food handlers are required to undergo a health examination and obtain a vaccination.	4.37	0.55
2	Individuals afflicted with foodborne illnesses or those who have contracted such illnesses should refrain from engaging in food handling activities.	4.40	0.49
3	Food handlers employ utensils and containers to guarantee the hygienic and secure handling of food.	4.45	0.51
4	Food handlers must ensure that food remains contained and does not come into contact with potential sources of contamination.	4.43	0.49
5	Food handlers are required to consistently maintain the cleanliness of their food, ensuring it is free from any contaminants such as debris, pests, dirt, soot, ash residues, and material residues.	4.45	0.51
6	Food handlers must don clean and suitable attire when dealing with food.	4.41	0.52
7	Food handlers are required to store raw materials, ingredients, intermediate food products, or finished food products in a regulated environment with specific temperatures to prevent the growth of harmful bacteria or the formation of toxins.	4.33	0.50
Overall Mean Score		4.40	0.51

With a mean score of 4.40, student interpretation of food safety rules in terms of training is high. Two of the seven questions offered in part on the perceptions of culinary students in the state of Johor regarding compliance with food safety rules regarding responsibility received the highest mean score. According to the study's findings, they shared the same value of 4.45. It was items 3 and 5 on "food handlers employ utensils and containers to guarantee the hygienic and secure handling of food" and "food handlers are required to consistently maintain the cleanliness of their food, ensuring it is free from any contaminants such as debris, pests, dirt, soot, ash residues, and material residues". The second highest item, with a score of 4.43, is item 4 on "food handlers must ensure that food remains contained and does not come into contact with potential sources of contamination", followed by item 6, which received a score of 4.41 on "food handlers must don clean and suitable attire when dealing with food". In addition, with a score of 4.40, item 2 ranks as the fourth-highest item for "individuals afflicted with foodborne illnesses or those who have contracted such illnesses should refrain from engaging in food handling activities".

In general, vocational students' perception of food safety laws may vary depending on their individual experiences and knowledge. Some students may view food safety laws as necessary to protect public health, while others may see them as overly strict and burdensome. Some students also believe that compliance with food safety

laws is essential for the success of food businesses. In contrast, others may view it as a barrier to innovation and creativity in the food industry (Stirling, Frisby & John, 2016). Food safety laws are established to ensure food products are safe for human consumption. These laws set standards for food production, processing, transportation, and storage to prevent contamination, adulteration, and other hazards that may harm public health. They also outline the responsibilities of food businesses and individuals in complying with these standards. Food handlers must prioritize cleanliness not only in terms of use but also in terms of cooking tools.

According to the research of Campos et al. (2015), perfect food handling techniques are crucial for preventing the spread of foodborne illnesses during meal preparation and service because soiled utensils can also cause food to spoil and become infected with insects. According to Kader & Samat (2018)), food must be kept in an airtight container and stored appropriately to prevent bacterial growth and cross-contamination. Also, taking care of the food after it is ready to be cooked must be a priority to prevent food poisoning among customers. The prevalence of food poisoning in this country results from poor food preparation. According to Tirado & Schmidt (2018), storing food at room temperature before serving is one of the leading causes of food poisoning. Food poisoning is caused by more than just bacteria. In addition, physical and chemical elements, as well as the type of food and atmosphere, can contaminate food (Yenilmez, Soyer & Rizk, 2019). Vocational students studying in the food industry, such as culinary arts, food service management, and food science, will likely be familiar with food safety laws and regulations. They may also be required to comply with these rules as part of their training or job responsibilities.

Furthermore, Table 5 presents the mean score distribution and interpretation of student evaluations of compliance with food safety standards in terms of food safety standards.

Table 5 *Distribution of the mean score and standard deviation of vocational students' general perceptions of food safety laws in terms of food safety standards*

No	Factor	Mean	Standard Deviation
1	Food handlers are required to wear a clean apron and cap that are brightly colored, as well as suitable footwear.	4.35	0.48
2	Prior to the preparation or presentation of food, it is imperative for food handlers to diligently cleanse their hands using soap and water.	4.41	0.49
3	Food handlers must clean and adequately cover the delivered food.	4.40	0.51
4	Food handlers must use a handkerchief to cover their nose or mouth while coughing or sneezing in a direction away from the food.	4.39	0.55
5	Food handlers are required to utilize either a spoon, fork, plastic gloves, or tongs for the purpose of holding hot food.	4.32	0.56
6	Food handlers are required to utilize distinct and hygienic cloth wipers for the purpose of cleaning their hands, tables, bowls, and other surfaces.	4.40	0.50
7	Food handlers are required to thoroughly sanitize their cutting boards and blades both before and after each use.	4.28	0.58
Overall Mean Score		4.37	0.53

The overall perception of vocational students' general perceptions on food safety laws in terms of food safety standards is 4.37, which is a high level of interpretation. The item with highest mean score were "prior to the

preparation or presentation of food, it is imperative for food handlers to diligently cleanse their hands using soap and water” with mean value of 4.41. The two items with the next highest mean scores were items 3 and 6, which state that “food handlers must clean and adequately cover the delivered food” and “food handlers are required to utilize distinct and hygienic cloth wipers for the purpose of cleaning their hands, tables, bowls, and other surfaces”. The next highest item, with an average score of 4.39, pertains to “food handlers must use a handkerchief to cover their nose or mouth while coughing or sneezing in a direction away from the food”. The item with the lowest mean score is item 7, which requires “food handlers are required to thoroughly sanitize their cutting boards and blades both before and after each use”.

The perception of students on food safety laws and compliance with food safety standards may vary depending on a variety of factors, such as their level of awareness and knowledge of food safety issues, their personal experiences with foodborne illnesses, and their exposure to media coverage of food safety incidents (Smith, 2019). Food safety laws and regulations are in place to protect consumers from the risks associated with consuming contaminated or unsafe food. Compliance with these laws and regulations is crucial to ensure food products are safe for consumption. Regarding license compliance, food businesses must obtain licenses and permits to operate legally, and these licenses often come with requirements for food safety standards (Garcia, 2019).

According to a study by Stepanovic (2019), washing hands correctly and frequently and using gloves, if necessary, can lower the likelihood of cross-contamination between food and food handlers' hands, hence decreasing the chance of developing Staphylococcus Aureus (MRSA) infection. It demonstrates a clean and organized mentality, encouraging students to adopt healthy lifestyles (Lee & Johnson, 2018). Thus, food handlers must prioritize hygiene and be always vigilant when handling and managing food to ensure that the food they serve is clean and safe. Some students may have a positive perception of food safety laws and compliance, recognizing the importance of these regulations in protecting public health. They may view businesses that comply with food safety standards as more trustworthy and responsible and may be more likely to choose to purchase food products from these businesses.

Ibekwe et al. (2021) discovered that if cooks are not cautious when preparing meals, they can transmit bacteria such as Staphylococcus aureus and Escherichia coli. To ensure that food is in good condition, culinary students must adhere to standard procedures such as washing hands before touching food or beverages. It is important to recognize food safety laws and compliance's role in protecting public health and encourage businesses to prioritize food safety in their operations. Education and awareness campaigns can help improve students' understanding of food safety issues and compliance with food safety standards (Brown & Williams, 2020).

Lastly, Table 6 presents the mean score distribution and interpretation of student evaluations of compliance with food safety standards regarding license compliance with food safety standards.

Table 6 *Distribution of the mean score and standard deviation of vocational students' general perceptions of food safety laws in terms of license compliance with food safety standards*

No	Factor	Mean	Standard Deviation
1	The business license of a food business owner must be regularly renewed.	4.35	0.48
2	Food entrepreneurs must display the halal mark at their eatery.	4.41	0.49
3	Business proprietors and individuals in the food service industry are required to acquire a health certificate from a qualified medical practitioner and possess a certificate or card confirming their health status.	4.40	0.51
4	Food enterprises must adhere to the norms and regulations on occasion.	4.39	0.55
5	Food establishments are required to constantly comply with the regulations set by the local governing body, regardless of any rationale.	4.32	0.56

6	An individual who owns a food business is not permitted to mistreat or alter the operational license of the business for any individual.	4.40	0.50
7	Food entrepreneurs are required to operate exclusively with an authorized license.	4.28	0.58
Overall Mean Score		4.36	0.52

The overall perception of vocational students' general perceptions on food safety laws in terms of license compliance with food safety standards is 4.36, which is a high level of interpretation. Item 2 on "Food entrepreneurs must display the halal mark at their eatery" received the highest mean score of 4.41, according to the study's findings followed by item 3 on "Business proprietors and individuals in the food service industry are required to acquire a health certificate from a qualified medical practitioner and possess a certificate or card confirming their health status". Item 6 on "An individual who owns a food business is not permitted to mistreat or alter the operational license of the business for any individual" has the same mean score of 4.40, making them the second item with the highest mean score. Item 4 on "food enterprises must adhere to the norms and regulations on occasion" has the third-highest mean score at 4.39, followed by item 1 on "the business license of a food business owner must be regularly renewed" with a score of 4.35. Next, the lowest mean score was attained for "Food entrepreneurs are required to operate exclusively with an authorized license", which received a mean score of 4.38 and ranked sixth.

In general, students studying food science, nutrition, or other related fields are likely to understand the importance of license compliance with food safety standards. They may also be aware of the various regulatory bodies that oversee food safety, such as the FDA (Food and Drug Administration) in the United States or the European Food Safety Authority (EFSA) in Europe (García & Mir, 2018). According to (Hassan, Ishak & Suhaimi, 2019), most Malaysian food entrepreneurs view the halal market as a commercial opportunity that can attract many clients, particularly Muslim customers. Thus, food enterprises must show the emblem and halal certificate to attract these customers (Abdullah, 2015). License compliance with food safety standards is crucial for ensuring that food products are safe for human consumption. Regulatory bodies put food safety standards in place to ensure that food products meet certain quality and safety criteria. Compliance with these standards is important for preventing foodborne illnesses and ensuring public health (Jensen et al., 2019).

In addition, according to Chan et al. (2018) research, there is a difference in cleanliness habits between operators who adhere to food safety training and those who do not. The Local Authorities must provide a valid license to every eatery, which must be renewed upon expiration. A company license that has expired is a significant offense. The Local Government Act of 1976 grants the authority to issue interim closure orders to food stalls whose operating licenses have expired or have not been renewed. According to the findings of a study by Ramalinggan (2018), food operators are not permitted to conduct food establishment activities or use locations or premises for food establishment operations if their license has expired, and the Licensing Authorities must grant a new license.

However, it is also possible that not all students know the specific regulations and guidelines that food producers and manufacturers must follow to comply with food safety standards. Some students may also have different opinions on the effectiveness and fairness of these regulations, depending on their personal beliefs and experiences (Manning & Wood, 2019). Overall, students studying food science, nutrition, or related fields need to understand license compliance with food safety standards, as this knowledge will be essential for their future careers in the food industry.

In this study, we examine how culinary students in Johor, Malaysia view compliance with food safety requirements regarding food safety training, food safety rules, food safety standards, and license compliance with food safety standards. Our analysis revealed that vocational students' general perceptions of food safety laws regarding food safety rules had the highest mean value, indicating that this is the most influential factor influencing how culinary students in the state of Johor perceive compliance with food safety standards. However, we also discovered that additional factors might influence the vocational students' general impressions of food safety legislation. Although our sample size was big and the data variability was low, it is crucial to emphasize that other factors may have contributed to our findings. However, other aspects should also be considered when making other judgments.

4. Conclusion

Culinary students' perceptions of food safety regulations may vary depending on their level of education, experience, and exposure to food safety training. However, culinary students are generally likely to have a positive

perception of food safety regulations as they are taught the importance of food safety in their curriculum. They must follow strict guidelines to ensure that food is prepared and served safely. Some culinary students may feel that the regulations are overly restrictive, especially if they must be aware of the reasons for the rule. Others may feel that the regulations are necessary to protect public health and are an important part of their education as food professionals. Additionally, culinary students with personal experience with foodborne illness or contamination may have a heightened awareness and appreciation of food safety regulations. It is important for culinary students to be well-versed in food safety regulations and to understand their importance. This knowledge can help them prepare and serve food safely, protect the public, and avoid liability issues arising from foodborne illness outbreaks.

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Conflict of Interest

Authors declare that there is no conflict of interests regarding the publication of the paper.

Author Contribution

Xu Wenjun: Conceptualization, methodology, and project administration. Drafted the manuscript and provided substantial revisions. Arihasnida Ariffin: Data collection, formal analysis, and validation. Contributed to writing the results and discussion sections. Khairul Anuar Abdul Rahman: Literature review and resources. Assisted with data interpretation and contributed to manuscript editing and review. Suhaizal Hashim: Provided technical expertise and helped refine the methodology.

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